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EXAMINER

MOORE, IAN N

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/823,808

Applicant(s)

BUFFAM, BRUCE

Examiner

Ian N. Moore

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claims 1,6,11,17 and 18 are objected to because of the following informalities:

**Claim 1** recites, “**the** ATM Q.2931 layer” in line 8. There is insufficient antecedent basis for this limitation in the claim.

**Claims 6,11 and 17** are also objected for the same reason as set forth above in claim 1.

**Claim 17** recites, “**the** call” in lines 8,9,11,12 and 13. There is insufficient antecedent basis for this limitation in the claim.

**Claim 18** recites, “**the** call” in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Appropriate corrections are required.

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter since the claim invention fail to fall within any of the categories of patentable subject matter set forth in § 101.

**Claim 11** recites, “**A computer-readable medium having stored thereon a plurality of instructions...**” in line 1-2.

In the Specification, page 10, paragraph 22 recites, "The software may also be resident on an article of manufacture comprising a computer usable mass storage medium or **propagated digital signal** having computer readable program code embodied therein..."

Thus, "a computer readable medium" in claim 11 is essentially "**propagated digital signal**" in light of the specification.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does **not appear** that a claim reciting "a **propagated signal**" embodied/encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

Second, "The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as

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sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

Third, a "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), *aff'd*, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

Fourth, the Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), *cert. denied*, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in *American Fruit Growers* when it passed the 1952 Patent Act. A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, *The Law of Patents for Useful Inventions* 270 (1890)).

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A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101.

On the other hand, from a technological standpoint, a signal or a record carrier encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

In view of the above analysis, it is clear that claim 11 recited propagated signal, which are ineligible for patent protection because it does not fall within any of the four statutory classes of § 101, namely, process, machine, manufacture, or composition of matter.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (US006760335B1) in view of Bradley (US006366580B1) and Hamami (US 6,182,193).

**Regarding Claims 1, 6, 11, and 17,** Andersson discloses a digital communication switch (see FIG. ATM Node/system 34) comprising:

a bus (see FIG. 4, bus/connection 1 between elements within; see col. 1, line 36-46);

a processor coupled to the bus (see FIG. 4, ATM node/system 34 contains processor/CPU/controller; see col. 1, line 36-46);

a storage device coupled to the bus, the storage device to store instructions to be executed by the processor (see FIG. 4, ATM node/system contains a memory to store instruction to be executed by processor/CPU/controller; see col. 1, line 36-46); and

a buffer to store voice data cells (see FIG. 4, AAL2 node/system stores voice data cells for switching; see col. 1, line 60), wherein the processor is configured to monitor the available bandwidth of a multiplexed connection (see FIG. 8, step 52,54; determining/monitoring resources; see col. 4, line 25-42; see col. 5, line 55-64; col. 6, line 32-53; see col. 10, line 13-40), receive a voice call (see FIG. 6, setup request; see FIG. 8, a new AAL2 connection), route the call according to the available bandwidth (see FIG. 8, step 54 with NO; see col. 4, line 35-42; col. 10, line 40-52; establishing a connection with available resources), and overflow the call onto a new/added multiplexed connection without sending the call onto the multiplexed connection when the available bandwidth of the multiplexed connection is insufficient to carry the call (see FIG. 8, step 54, 56; adding/set-up a new AAL2 connection associated with a new AAL2 mux pair when there is no resources for new connection, and the new connection is not sent or established over original AAL-2 mux since there is no enough resources on original AAL-2 mux; see col. 4, line 25-36,40-47; col. 5, line 55 to col. 6, line 2; see col. 10, line 52-62);

presenting the call to the a new/added multiplexed connection to ATM signaling layer (see FIG. 4,6, setting-up/presenting a new AAL2 connection associated with a new AAL2 mux pair to ATM SE (signaling Element) or ATM Adaptation Layer (AAL) signaling layer/element (AAL2 SE); see col. 5, line 1-67) if the multiplexing connection's bandwidth is insufficient to carry the call (see FIG. 8, step 54, 56; if there is no resources for new connection, and the new connection is not sent or established over original AAL-2 mux since there is no enough resources on original AAL-2 mux; see col. 4, line 25-36,40-47; col. 5, line 55 to col. 6, line 2; see col. 10, line 52-62).

Andersson does not explicitly disclose a non-multiplexed connection. However, having a non-multiplexed connection/channel in ATM AAL2 utilizing a single ATM Single Channel Adaptation (SCA) is well known in the art and ATM standards. In particular, Bradley teaches a non-multiplexed connection (see col. 1, line 53-60; utilizing ATM Single Channel Adaptation (SCA) SVC instead of multiplexing multiple channel onto a single SVC). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a non-multiplexed connection or a signal channel, as taught by Bradley in the system of Andersson, so that it would avoid the necessity of having to de-multiplex and multiplex the packet; see Bradley col. 1, line 57-59.

Although discloses signaling is performed according to well known ATM signaling protocols, neither Andersson nor Bradley explicitly disclose Q.2931. However, setting-up a connection or signaling utilizing ATM Q.2931 (B-ISDN,DSS 2, UNI for basic call/connection control) layer/protocol is well known in the art as ITU-T Q.2931 (see IDS 1-18-2005 of the record). In particular, Hamami discloses sending the call by presenting a call to the ATM Q.2931



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layer for signaling to set up a connection/call (see FIG. 1, user side 10 setup the call by transmitting to signaling module 16 with Q.2931 layer component for signaling request to the network side 30; see col. 5, line 14-46; see col. 6, line 1-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Q.2931, as taught by Hamami, in the combined system of Andersson and Bradley, so that it would provide services compatible with ITU-T recommendation for signaling in ATM network; see Hamami col. 5, line 24-30; also by utilizing ITU-T ATM standard Q.2931, it would provide interoperability with other ATM system in the networks.

**Regarding Claims 2, 7, 12, and 18,** Andersson discloses sending the call over the multiplexed connection when the available bandwidth of the multiplexed connection is sufficient to carry the call (see FIG. 8, step 54 with NO; see col. 4, line 35-42; col. 10, line 40-52; establishing a connection with available resources by utilizing adequate existing/unused AAL2 connection).

**Regarding Claims 3, 8, and 13,** Andersson discloses wherein overflowing the call comprises:

adding a single multiplexed connection over the link per call (see FIG. 8, step 54, 56; adding/set-up a new AAL2 connection associated with a new AAL2 mux pair when there is no resources for new connection; see col. 4, line 25-36,40-47; col. 5, line 55 to col. 6, line 2; see col. 10, line 52-62);

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transmitting the call over the multiplexed connection (see FIG. 6; transmitting a connection over AAL2 connection; see col. 4, line 25-36,40-47; col. 5, line 55 to col. 6, line 2; see col. 10, line 52-62); and

tearing down the single multiplexed connection once the call is completed (see FIG. 9; dropping/removing/tear down a connection once the AAL2 call is released/completed; see col. 5, line 55 to col. 6, line 2; see col. 8, line 12-59; see col. 10, line 62 to col. 11, line 35).

Bradley teaches a non-multiplexed connection as set forth above in claims 1,6,11 and 17. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a non-multiplexed connection or a signal channel, as taught by Bradley in the system of Andersson, for the same motivation as stated above in claims 1,6,11 and 17.

**Regarding Claims 4, 9, 14 and 19**, Andersson discloses wherein the multiplexed connection is a multiplexed Q.AAL2 signaling channel (see col. 2, line 20-30; see col. 5, line 62-64; see col. 7, line 63; see col. 8, line 35-42; AAL2 mux connection/channel is Q.2630 channel which is also known as Q.AAL2 signaling channel in the art).

**Regarding Claims 5, 10, 15 and 20**, the combined system of Andersson, Bradley and Hamami disclosed all limitation. Andersson discloses wherein the newly added multiplexed connection is multiplexed Q.AAL2 signaling channel (see col. 2, line 20-30; see col. 5, line 62-64; see col. 7, line 63; see col. 8, line 35-42; AAL2 mux connection/channel is Q.2630 channel which is also known as Q.AAL2 signaling channel in the art). Bradley also discloses a non-multiplexed/a single channel in AAL2 (see col. 1, line 53-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide

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Bradley's a non-multiplexed connection or a signal channel in Andersson's a newly added Q.AAL2 signaling channel, as taught by Bradley in the system of Andersson for the same motivation as stated above in claims 1,6,11 and 17.

***Response to Arguments***

6. Applicant's arguments with respect to claim 1-15 and 17-20 have been considered but are moot in view of the new ground(s) of rejection.

**Regarding claims 1-15 and 17-20, the applicant argued that, "...Bradley also discloses...Having a single channel per ATM SVC avoids the necessity of having to de-multiplex and multiplex at the packet level. (Bradley, col. 2, lines 56-58)... Andersson does not suggest a combination with Bradley, and Bradley does not suggest a combination with Andersson because Bradley teaches away from multiplexing multiple channels onto a single SVC as taught by Andersson. It would be impermissible hindsight to combine Andersson with Bradley based on applicant's own disclosure..."** in page 8-9.

**In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).** In this case, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a non-multiplexed connection or a signal channel, as taught

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by Bradley in the system of Andersson, so that it would avoid the necessity of having to de-multiplex and multiplex the packet; see Bradley col. 1, line 57-59.

**In response to applicant's argument that Bradley explicitly teaches away**, examiner was unable to locate Bradley's disclosure at "**col. 2, lines 56-58**" as argued by the applicant. However, Bradley col. 1, lines 56-58 discloses that a signal channel SVC enables the requirement of multiplex/de-multiplex, which clearly anticipates applicant claimed invention of "**non-multiplex connection**" since Bradley's single channel connection neither multiplexed nor de-multiplexed. Thus, Bradley does not teach away from Andersson.

**In response to applicant's argument that Bradley explicitly teaches away**, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, applicant argued claimed recites, "...*monitor the available bandwidth of a multiplexed connection...overflow the call onto a non-multiplex connection*". Andersson discloses, "*monitor the available bandwidth of a multiplexed connection...*" by utilizing a multiplex connection for an overflow new connection. Bradley discloses "*the call onto a non-multiplex connection*" by utilizing non-multiplex connection or a signal channel for a connection/data in order to avoid muxing and demuxing. Thus, Andersson's overflow new multiplex connection can be modified with "teaching" of Bradley, **not bodily incorporation**, which utilizes a non-multiplex or a single connection. In view of the above, due

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to the fact that Bradley teaches what Andersson's lacks does not make or cause Bradley to teach away.

**In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning**, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

**Regarding claims 1-15 and 17-20, the applicant argued that**, "... even if Andersson and Bradley were combined, such a combination would lack overflowing the call onto a non-multiplex connection without sending the call to the ATM Q.2931 layer if the multiplexed connection's bandwidth is insufficient to carry the call ..." in page 9.

**In response to applicant's argument, the examiner respectfully disagrees** with the argument above. The combined system of Andersson, Bradley and Hamami clearly discloses the argued claimed invention as set forth above.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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